

REMARKS/ARGUMENTS

Claims 1-8 and 10 are pending in this application. By this amendment, Applicant amends Claims 1 and 6 and cancels Claim 9.

Claims 1-3 and 6-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Matsuura (U.S. 6,751,803). Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Matsuura, and further in view of Shaw (U.S. 5,953,043). Claim 9 has been canceled. Applicant respectfully traverses the rejections of Claims 1-8 and 10.

Claim 1 has been amended to recite:

A CATV tuner, comprising:

a tuner case;

an input circuit connected to an input terminal for transmitting and receiving a signal to and from a CATV station, the input circuit including an upstream-signal input terminal, a distributor, a low-pass filter, an amplifier, and a downstream-signal output terminal;

a first mixer circuit for mixing an output signal from the input circuit and a first local-oscillation signal so as to generate a first IF signal;

a first oscillation circuit for transmitting the first local-oscillation signal to the first mixer circuit;

a first IF circuit for processing the first IF signal;

a second mixer circuit for mixing an output signal from the first IF circuit and a second local-oscillation signal so as to generate a second IF signal; and

a second oscillation circuit for transmitting the second local-oscillation signal to the second mixer circuit; and

a second IF circuit for processing the second IF signal;

wherein at least one upstream signal is input to the upstream-signal input terminal so as to be transmitted to the CATV station, the distributor distributes a reception signal to generate at least two distributed signals and transmits one of the distributed signals to the downstream-signal output terminal as a downstream signal so that the downstream signal is output therefrom, and the amplifier is arranged between the distributor and the downstream-signal output terminal so as to amplify the downstream signal, and the low-pass filter is arranged between the distributor and the

amplifier so as to remove a CATV signal having a frequency that is higher than a predetermined upper limit frequency of the downstream signal;
the distributor is arranged between the upstream-signal input terminal of the input circuit and the first mixer; and
the distributor and the amplifier are disposed in the tuner case. (emphasis added)

With the unique combination and arrangement recited in Applicant's Claim 1, including the feature of "the distributor and the amplifier are disposed in the tuner case," unlike conventional CATV tuners, Applicant has been able to provide a CATV tuner in which noise generated in the set-top box (STB) outside the tuner case is blocked by the tuner case and prevented from being input to an input terminal of the amplifier. Therefore, the noise is prevented from being amplified by the amplifier and the signal-to-noise ratio of the downstream signal does not deteriorate (see, for example, the first full paragraph on page 9 of the originally filed specification).

The Examiner alleged that AAPA teaches all of the features recited in Applicant's Claim 1, except for the features of the amplifier being arranged between the distributor and the downstream-signal output terminal and a low-pass filter as claimed.

The Examiner further alleged, "Matsuura discloses a branch circuit similar to AAPA's 14-15-16 branch [AAPA Fig5] wherein 'the amplifier arranged between the distributor and the downstream-signal output terminal so as to amplify the downstream signal' (amplifier 5/6 is between the distributor 2 and output terminals 12/14 [Matsuura Fig 1]), and 'the low-pass filter is arranged between the distributor and the amplifier so as to remove a CATV signal having a frequency that is higher than a predetermined upper limit frequency of the downstream signal' (band pass filter 4 comprises a 300 MHz low pass filter located between distributor 2 and amplifier 5/6 for removing unnecessary signal components [Matsuura Fig 1, col. 6, l. 1-11])."

Thus, the Examiner concluded that it would have been obvious "to modify AAPA's branch to be similar to Matsuura's branch, thus moving the amplifier and adding a low pass filter for the purpose of removing unwanted frequency components before

amplifying the signal [Matsuura col. 6, l. 1-11].”

Applicant's Claim 1 has been amended to recite the features of “a tuner case” and “the distributor and the amplifier are disposed in the tuner case.” Support for these features is found, for example, in the first full paragraph on page 9 of the originally filed specification and in Fig. 1 of the originally filed drawings.

As clearly and specifically disclosed in the Background of the Invention of the present application (AAPA), the prior art amplifier 16 is disposed outside of a tuner case. In fact, as described in the first full paragraph on page 3 of the originally filed specification, “the downstream signal from the downstream-signal output terminal 15 is transmitted to the STB via the amplifier 16 outside the CATV tuner 1. Therefore, noise generated in the STB may flow into wiring between the downstream-signal output terminal 15 and the amplifier 16 that are provided outside the CATV tuner 1. In this case, the noise entering into the wiring is amplified by the amplifier 16, whereby the S/N ratio of the downstream signal output from the amplifier 16 is deteriorated” (emphasis added). Thus, AAPA certainly fails to teach or suggest the feature of “the distributor and the amplifier are disposed in the tuner case” as recited in Applicant's Claim 1.

Matsuura fails to teach or suggest any specific arrangement of the circuit element disclosed therein with respect to any case or housing, and certainly fails to teach or suggest the feature of “the distributor and the amplifier are disposed in the tuner case” as recited in Applicant's Claim 1.

With respect to originally filed Claims 6 and 9 (Claim 9 has been canceled herein), the Examiner took OFFICIAL NOTICE that it was well known to provide a case to house various circuit elements. While this may or may not be true, it is clearly not true that it would have been obvious to provide a tuner case in which both a distributor and an amplifier are disposed, as recited in Applicant's Claim 1. As described above, conventional CATV tuners do not include a tuner case in which both a distributor and an amplifier are disposed, and the Examiner has failed to provide any evidence whatsoever that it was well known to dispose both a distributor and an amplifier in a common CATV

tuner case. Thus, absent some evidence to the contrary, Applicant respectfully submits that it would not have been obvious to modify the CATV tuner of AAPA, as modified by Matsuura, such that the distributor and the amplifier are disposed in a tuner case.

Furthermore, since AAPA specifically teaches away from an arrangement in which the amplifier 16 is disposed in a tuner case along with a distributor, it clearly would not have been obvious to modify the CATV tuner of AAPA as alleged by the Examiner. The Examiner is reminded that it is error to find obviousness where references diverge and teach away from the invention at hand. W.L. Gore & Assoc. v. Garlock Inc., 220 USPQ 303, 311 (Fed. Cir. 1983).

In addition, the Examiner alleged that the reason for modifying AAPA to be similar to the circuit of Matsuura would have been “for the purpose of removing unwanted frequency components before amplifying the signal.” However, according to AAPA, unwanted frequency components are already removed before amplifying the signal by the band pass filter 12 and the high pass filter 13. Thus, contrary to the Examiner’s allegation, one of ordinary skill in the art would have had absolutely no reason to modify circuit of AAPA to be similar to the circuit of Matsuura because the benefit that the Examiner would have been obtained by such a modification is already achieved by the circuit of AAPA.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 1 under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Matsuura.

The Examiner relied upon Shaw to allegedly cure various deficiencies of AAPA and Matsuura. However, Shaw clearly fails to teach or suggest the features of “the distributor is arranged between the upstream-signal input terminal of the input circuit and the first mixer” and “the distributor and the amplifier are disposed in the tuner case” as recited in Applicant’s Claim 1. Thus, Applicant respectfully submits that Shaw fails to cure the deficiencies of AAPA and Matsuura described above.

Accordingly, Applicant respectfully submits that AAPA, Matsuura, and Shaw,

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applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant's Claim 1.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claim 1 is allowable. Claims 2-8 and 10 depend upon Claim 1, and are therefore allowable for at least the reasons that Claim 1 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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/Christopher A. Bennett, #46,710/
Attorneys for Applicant

KEATING & BENNETT, LLP
8180 Greensboro Drive, Suite 850
Tyson's Corner, VA 22102
Telephone: (703) 637-1480
Facsimile: (703) 637-1499

Joseph R. Keating
Registration No. 37,368

Christopher A. Bennett
Registration No. 46,710